

Modification of Carrier Mobility in a Semiconductor Device

ABSTRACT

Tensile or compressive stress may be added in one or more selected locations to the biaxial residual stress existing in the channel of a semiconductor device, such as a MOSFET. The periphery of the active area containing the channel is modified by following layout procedures that result in forming outward protrusions of or inward depressions in the periphery of the active area and its surrounding shallow trench isolation during generally otherwise conventional fabrication of the device.